# A comparison of attitudes towards dreams in Germany and Tunisia

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*Summary*. Former studies have shown that in many Islamic cultures people view dreams as a product of external sources and therefore have a high appreciation towards dreams in their waking life. In contrast, people in Western cultures in general do not value their dreams strongly in their waking life and mostly view them as a product from their inner reality. This study, which was carried out online, compared attitudes towards dreams in a country of the Islamic culture (Tunisia) with attitudes towards dreams in a country of the Western culture (Germany). Participants ($N$ = 483) answered questions about their attitudes and mindsets towards dreaming. The findings are consistent with the hypotheses that people in Islamic cultures have a higher appreciation towards dreaming, and that dreams have a direct effect on their waking life. In addition, the findings confirm that people from Germany appreciate their dreams less than people from Tunisia, even though the findings showed that the German sample had more intense dreams than the Tunisian sample. The findings confirm a tendency towards patriarchy in the Tunisian sample, and the Islamic religion itself was correlated with a higher appreciation towards dreams.

*Keywords:* Dreams, Islamic culture, attitudes towards dreams, external dream source, internal dream source

## 1. Introduction

Every culture for which we have anthropological evidence has investigated its dreams. Attitudes towards dreams differ especially regarding their source and meaning (Hughes, 2017). Several former studies have shown that cultural and religious attitudes influence dream content, the appreciation and interpretation of dreams (e.g. Punamäki & Joustie, 1998; Shulman & Stroumsa, 1999). Every culture articulates its own dream-related understanding, for example by believing that dreams may reveal the future or past, concerning boundaries between the individual and society, or concerning the origin of dreams. Dreams can be perceived as coming from the internal or the external and transcendental. In modern Western culture, the belief in an internal dream source is common. Influenced by psychoanalysis and the enlightenment, most people view their dream as a product of their subjective and inner emotions (King, Welt & Bulkeley, 2011; Neil, 2016; Nwoye, 2017; Punamäki & Joustie, 1998).

A large study revealed that the impact of dreams on waking life, therefore its relevance in the Western culture, was relatively low, unless people were currently in psychotherapeutic treatment (King, Welt & Bulkeley, 2011). These findings were also supported by other studies (Laughlin, 1991; Laughlin & Troop, 2001). Yet, this modern Western assumption is not shared by every culture, which often understands dreams as transcendent communication, and therefore appreciates dreams very much. Dreams are often viewed as a communication with a transcendental world, with deceased, divine or demonic beings (Crapanzano, 1975; Desjarlais, 1991; Hoffman, 1997; Nasser, 2009; Shore, Orton & Manson, 2009). Several studies have shown that the assumption of a transcendental or external origin of dreams is widespread among several African and Asian cultures and differs from the common Western perspective on dreams (Bukeley 2002, 2008; Crapanzano, 1975; Holy, 1992; Laughlin & Rock, 2014; Mittermaier, 2010; Pick & Roper, 2004; Price, 1986). McManus, Laughlin and Shearer (1993) proposed that there are so-called *monophasic* Western cultures that tend to appreciate their waking-life experiences and usually don't integrate dream experiences in their social development, whereas so-called *polyphasic* Eastern cultures appreciate multiple layers of reality and appreciate dream experiences in their culture.

Especially in Islamic cultures, dreaming and dream interpretation play remarkably rich and differentiated roles, where the belief in an external transcendental dream source is widespread, as the individual can interact with the divine through dreams (Abu-Rabia, 2014; Ather, 2015; Bulkeley, 2008; Punamäki & Joustie, 1998; Shulman & Stroumsa, 1999). The Islam, with its rich dream tradition and explicit dream advice in the Hadith, strongly associates dreams with behavior in waking life, and relates them to dream messages believed to come from a higher source. (Bulkeley, 2008; Crapanzano, 1975). The Hadith is a collection of written accounts of the prophet's words and deeds (Bulkeley, 2002). Many people in the Islamic cultures believe in *Jinn* (demons), who can appear in dreams to communicate with the dreamer (Crapanzano, 1975; Denny, 1985). As the belief in an external locus of control and transcendental interventions are common regarding illness or suffering, people in Islamic cultures tend to not view the source of their issues within themselves. Several recent studies confirmed a higher appreciation towards dreams regarding personal affairs in waking life in the Islamic culture in Jordan, Iran, Morocco

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and Egypt (Bulkeley, 2008; Edgar, 2011; Hoffman, 1997; McNamara & Bulkeley, 2015; Mittermaier, 2010; Nasser, 2009). Whilst in the Islamic religion dreams are traditionally viewed as messages of God and other supernatural beings, many Christians likewise have seen bad dreams over history as the devil's temptations and have neglected oneiric experiences. Christianity has no comparable rich dream tradition and has an ambivalent attitude towards dreams; dreams are less connected to waking life. In Islam, nightmares are thought to come from the evil, therefore people are instructed to not to talk about them and offer a prayer instead (Bulkeley, 2008).

To our best knowledge, no empirical study has compared a Western and Islamic culture regarding the internal and external dream source and its resulting appreciation towards dreams in waking life so far.

Germany is an individualistic country, with an increasing distance towards traditional values within the last years. Pragmatism is widely spread, and people tend to not be very spiritual (Hofstede, 2019). Tunisia is a Muslim-Arabic country, where family and religion are the origins of social relations with a collectivistic social orientation (Aida & Majdi, 2014). The Islam is widely spread, with a 98.5% homogeneity in the country (Ajili, 2013). Positive courtesy and the fear of losing one's face are common, and therefore inner emotions are often kept hidden (Labben, 2017). Practices to ward off Jinn (demons) are widespread in Tunisia (Somer & Saadon, 2000). As it is the most modern country of North Africa, men and women are largely equal by law, even though it is still a country with a strong patriarchal culture (Aida & Majdi, 2014; Al-Krenawi & Graham (2000)).

The aim of the present study was twofold: Firstly, to explore if the often-mentioned differences of a transcendental dream source in the Islamic culture and an internal dream source in the Western culture could be found empirically; secondly, to explore whether there was a stronger association between dreams and waking life in the Islamic culture. To investigate these research questions, the present study compared attitudes towards dreams of people from the Tunisian Islamic culture and from people from the German Western culture.

Based on the assumptions and results described above, we hypothesized differences in the cultural mindsets between Tunisians and Germans, supposing a higher appreciation towards dreams in the Islamic culture indicated by a higher dream recall ability. Likewise, bad dreams, termed nightmares in the Western culture, which may represent bad advice or punishing transcendental communications in the Islamic culture, may also be more frequent in the Islamic culture due to the increased attention paid to dreams. Derived from the assumption of a higher appreciation of dreams in the Islamic culture, we expected that dreams would be experienced emotionally more intensely in Tunisia compared to Germany. In addition, we hypothesized that in Islam dreams would be regarded as coming from the external, would be more closely related to waking life and have a stronger impact on waking life. Furthermore, we expected more pronounced gender differences among all dream-relevant questions in the Tunisian than in the German sample. In both samples, we expected a higher nightmare prevalence, a more negative valence and a higher dream recall ability in female than in male participants (Schredl & Reinhard, 2007).

## 2. Method

### 2.1. Participants

For the purpose of this study, we recruited participants via social networks and email in Tunisia and in Germany. Overall, 483 persons completed the online survey (314 women, 169 men). The mean age of the total sample was 28.68 ± 10.27 years, with a range from 17 to 71 years. 71.4 % ($N$ = 345) of the sample were from Tunisia, 28.6 % ($N$ = 138) from Germany. The distribution of the religious orientation was: Muslim ($N$ = 289), Atheist ($N$ = 117), Catholic ($N$ = 40), Protestant ($N$ = 25), Agnostic ($N$ = 2), Others ($N$ = 10). The Catholic and Protestant beliefs were combined into one group, the Christian belief ($N$ = 65).

There were 38 male participants and 100 female participants among the German sample, whereas there were 131 male and 214 female participants in the Tunisian sample. Among the Tunisian participants, there were fewer female participants (62.03%) than in the German sample (72.46%, $\chi^2(1, 483) = 4.72$, $p = .30$). The mean age of the German sample was 36.33 ± 13.05 years, with a range from 20 to 71 years. The mean age of the Tunisian sample was 25.63 ± 6.88 years, with a range from 17 to 64 years ($t$ (168.3) = 9.14, $p < .001$). 83.77 % participants among the Tunisian sample were Muslim, whereas 47.10 % participants among the German sample reported to have a Christian belief. The remaining 52.2 % participants in the German sample were atheist and 0.7 % Muslim. The participants did not receive any compensation. Written informed consent was obtained from all participants.

### 2.2. Procedure

The study was conducted as an online investigation between November 19th and November 28th, 2019, in Tunisia and Germany. Questionnaires for the Tunisian participants were presented in French, those for the German participants in German. The time to fill out the questionnaire was about 10 min.

### 2.3. Research Instruments

In addition to demographic data (gender, age, religion, and culture) and questions about the average sleep duration and the intake of sleep affecting drugs, eight specific questions assessed dream characteristics were presented. Four of these questions were taken from the Mannheim Dream Questionnaire (MADRE, Schredl et al., 2014) to assess dream recall frequency, dream intensity, dream valence and nightmare frequency. Dream recall frequency was measured with a 7-point Likert scale (1 = never, 2 = less than once a month, 3 = about once a month, 4 = two or three times a month, 5 = about once a week, 6 = several times a week, 7 = almost every morning). Dream intensity was assessed on a 5-point Likert scale (1 = not at all intense, 2 = not that intense, 3 = somewhat intense, 4 = quite intense, 5 = very intense). Dream valence was measured by a 5-point Likert scale (-2 = very negative, -1 = somewhat negative, 0 = neutral, 1 = somewhat positive, 2 = very positive) and the nightmare frequency on a 8-point Likert scale (1 = never, 2 = less than once a year, 3 = about once a year, 4 = about two to four times a year, 5 = about once a month, 6 = two to three times a month, 7 = about once a week, 8 = several times a week).

The remaining four questions served to assess the appreciation towards dreams and the assumed dream source. All of them were constructed for the present study and read as follows: "Do you think that you are actively involved in the formation of your dream while dreaming?" and had to be answered on a 4-point scale (1 = not at all, 2 = rather not, 3 = rather yes, 4 = absolutely). This question assessed the internal or external dream source. The question "Do you believe that your waking-life behavior has an influence on your dream (e.g. visit a sacred place, praying or committing a good act)?" and had to be answered on a 4-point scale (1 = not at all, 2 = rather not, 3 = rather yes, 4 = absolutely) and assessed the impact of waking-life behavior on dreams. The question "Do you think the dream contains an important message?" was assessed by a 4-point scale (1 = not at all, 2 = rather not, 3 = rather yes, 4 = absolutely) and addressed the appreciation of a dream and indirectly an external dream source, which was assumed to be responsible for the important dream message. The question "Did you ever change your behavior in waking life based on a dream you had?" had to be answered on a 4-point scale (1 = never, 2 = occasionally, 3 = often, 4 = always) and assessed the impact of dreams on waking life.

### 2.4. Data Analysis

Statistical procedures were carried out with SPSS Statistics for Windows 24. To assess differences between the Tunisian and the German sample, *t*-tests were computed between these two different samples. Although the German sample contained fewer male participants, effects of gender were tentatively computed by an ANOVA with the between factors gender (male, female) and country (Tunisia, Germany). Ordinal regressions were computed to make sure the scales are correctly ordinal scaled. Regarding the question "Did you ever change your behavior in waking life based on a dream you had?", the answers *occasionally*, *often* and *always* were summarized to "*done before*".

## 3. Results

### 3.1. Differences between the German and the Tunisian sample

Descriptive statistics are presented in Table 2. The majority of the German sample reported having an average sleep duration between 6 and 8 hours (81.9%). Furthermore, the majority of the German sample (89.9%) reported they did not take any sleep affecting medications. The Tunisian sample showed similar responses, with 73.9% participants with an average sleep duration between 6 and 8 hours and 86.1 % participants not taking any sleep affecting drugs. No difference in average sleep duration and intake of sleep affecting medications were found between the German and the Tunisian sample. The results concerning dream measures are presented in Table 1. Dream recall frequency was not significantly different between the Tunisian and the German sample, ($t$ (481) = -0.75, $p$ = .456). However, German participants reported a higher intensity of dream emotions than the Tunisian participants, ($t$ (481) = 4.74, $p$ < .001). The dream valence was not statistically different between the Tunisian and the German participants ($t$ (481) = 0.52, $p$ = .605). Significant differences were found regarding nightmare frequency, ($t$ (481) = 2.42, $p$ = .016), with German participants reporting more nightmares than the Tunisian participants.

Concerning the assumed dream source, the question: *"Do you think that you are actively involved in the formation of your dream while dreaming?"* was rated significantly higher by the Tunisian than by the German participants ($t$ (481) = -4.52, $p$ < .001). The question *"Do you think the dream contains an important message?"* was rated higher in the Tunisian sample than in the German sample but this difference did not reach statistical significance ($t$(481) = 1.27, $p$ = .203). Concerning the relation of dreams to waking life, the question "*Do you believe that your waking-life behavior has an influence on your dream (e.g. visit a sacred place, praying or committing a good act)?"*, was significantly more often agreed to by Tunisians than by Germans ($t$ (481) = -9.20, $p$ < .001). Likewise, the question *"Did you ever change your behavior in waking life based on a dream you had?"* was significantly more often agreed to by Tunisian than by German participants, ($t$ (481) = -6.73, $p$ < .001). See Table 1 for the descriptive data.

Regarding the existing age and gender differences between the Tunisian and the German sample we computed ordinal regressions. It was found that gender significantly predicted dream recall frequency ($F_{3,508}$ = 4.754, $R^2$ = .027, $p$ = .003). Further gender and nation significantly predicted dream intensity ($F_{3,508}$ = 4.658, $R^2$ = .043, $p$ < .001). In another model predicting nightmare prevalence, age and gender showed a significant influence ($F_{3,508}$ = 9.046, $R^2$ = .051, $p$ < .001). Concerning the four questions, assumed to address the dream source, it was found that nation significantly predicted the involvement in dream formation ($F_{3,508}$ = 4.679, $R^2$ = .036, $p$ = .001). Further, age and nation significantly predicted the relevance of the waking life behavior on a dream ($F_{3,508}$ = 21.499, $R^2$ = .145, $p$ < .001). Receiving a message through dreams was significantly predicted by nation and dream recall ability ($F_{4,507}$ = 4.802, $R^2$ = .037, $p$ < .001). Change of behavior based on a dream was significantly predicted by nation ($F_{4,507}$ = 20.658, $R^2$ = .140, $p$ < .001). The regression models are presented in Table 3.

### 3.2. Gender effects

Gender effects were investigated with respect to the country of residence of the participants. The dream recall fre-

*Table 1*. Means and standard deviations in dream characteristics between the German and the Tunisian sample (M ± SD)

| Variable | Tunisia (N = 345) | Germany (N = 138) |
|---|---|---|
| Dream recall frequency | 3.22 ± 1.53 | 3.11 ± 1.51 |
| Intensity of dream emotions | 3.22 ± 0.98 | 3.68 ± 0.91*** |
| Dream valence | 0.23 ± 1.00 | 0.19 ± 0.84 |
| Nightmare frequency | 4.25 ± 1.84 | 4.70 ± 1.88* |
| Involved in formation of dreams | 2.70 ± 0.88 | 2.31 ± 0.74*** |
| Dreams being influenced by waking-life behavior | 3.05 ± 0.85 | 2.20 ± 0.95*** |
| Dreams as messages | 2.68 ± 0.96 | 2.57 ± 0.85 |
| Change of waking-life behavior | 1.81 ± 0.79 | 1.37 ± 0.58*** |

* $p$ < .05, *** $p$ < .001

*Table 2*. Means and standard deviations in dream characteristics depending on the gender and the nationality of the participants

| | Total sample | | Tunisian sample | | German sample | |
|---|---|---|---|---|---|---|
| | Women (N = 314) | Men (N = 169) | Women (N = 131) | Men (N = 214) | Women (N = 100) | Men (N = 38) |
| Dream recall frequency | 3.03 ± 1.46 | 3.50 ± 1.60 | 2.98 ± 1.41 | 3.62 ± 1.64*** | 3.12 ± 1.55 | 3.08 ± 1.40 |
| Emotional intensity | 3.45 ± 0.94 | 3.17 ± 1.03*** | 3.30 ± 0.95 | 3.10 ± 1.01 | 3.78 ± 0.82 | 3.42 ± 1.08 |
| Dream valence | -0.27 ± 0.96 | -0.12 ± 0.95* | -0.27 ± 1.01 | -0.18 ± 0.99 | -0.28 ± 0.85 | 0.05 ± 0.77 |
| Nightmare frequency | 4.21 ± 1.78 | 4.70 ± 1.96** | 4.08 ± 1.76 | 4.53 ± 1.93 | 4.48 ± 1.80 | 5.29 ± 1.99 |
| Involved in formation of dreams | 2.69 ± 0.81 | 2.58 ± 0.96 | 2.72 ± 0.81 | 2.65 ± 0.98 | 2.30 ± 0.72 | 2.34 ± 0.82 |
| Dreams being influenced by waking-life behavior | 2.77 ± 0.94 | 2.87 ± 1.00 | 3.09 ± 0.76 | 2.98 ± 0.98 | 2.09 ± 0.93 | 2.47 ± 0.95* |
| Dreams as messages | 2.69 ± 0.87 | 2.57 ± 1.02 | 2.73 ± 0.89 | 2.61 ± 1.05 | 2.61 ± 0.82 | 2.45 ± 0.92 |
| Change of behavior | 1.67 ± 0.75 | 1.71 ± 0.80 | 1.83 ± 0.77 | 1.77 ± 0.83 | 1.32 ± 0.55 | 1.50 ± 0.65 |

* $p < .05$, ** $p < .01$, *** $p < .001$ for comparisons between women and men in the respective sample

quency showed a significant interaction between nation and gender, $F(1, 479) = 4.18$, $p = .042$, partial $\eta^2 = .009$. Subsequent tests revealed that this effect was mainly determined by differences in the Tunisian sample in which male participants reported a higher dream recall frequency than females ($t(343) = -3.69$, $p < .001$). Emotional intensity of dreams was more pronounced in female compared to male participants (main effect gender: $F(1,479) = 7.07$, $p < .01$, partial $\eta^2 = .015$). Dream valence was more positive in male than in female participants (main effect gender: $F(1,479) = 4.13$, $p < .05$, partial $\eta^2 = .009$ ). Nightmare frequency was higher in male than in female participants (main effect gender: $F(1,479) = 9.58$, $p < .01$, partial $\eta^2 = .02$). For the question *"Do you believe that your waking-life behavior has an influence on your dream (e.g. visit a sacred place, praying or committing a good act?"* a significant interaction between nation and gender could be observed ($F_{1,479}$) = 6.46, $p < .05$, partial $\eta^2 = .013$). This interaction indicated that in the Tunisian sample male and females scored comparably high on this question, while the German sample scored generally lower on this question (see above) with a significantly lower rating in women compared to men ($t(136) = 2.15$, $p < .05$)(Table 2).

## 4. Discussion

The findings of the present study show that Western and Islamic cultures, exemplified by Germany and Tunisia, seem to differ in dreaming behavior and their attitudes toward dreams and dreaming. Participants from Germany described their dreams as emotionally more intense and reported more nightmares compared to participants from Tunisia. Participants from Tunisia believed that they were actively involved in the formation of their dreams, their dreams being affected by waking-life behavior, and they changed their waking-life behavior due to a dream to a greater extent than participants from Germany did.

Our hypothesis of more pronounced gender differences in the Tunisian sample than in the German sample could only partially be supported. Although we found gender differences in the Tunisian sample, namely a higher dream recall frequency in the male participants, other gender differences (emotional intensity, nightmare frequency, dream valence) were also observed in the German sample. Regarding the overall sample, a higher emotional intensity in dreams of female participants support previous findings on gender differences (Schredl, 2007). In contrast, the more positive valence of dreams in male compared to female participants was not in line with previous findings (Schredl & Doll, 1998), nor was the higher nightmare frequency in male participants (Schredl & Reinhard, 2008). On the other hand, the question whether dreams are influenced by waking-life behavior showed significant gender differences only in the German sample, with more men than women approving this question.

Thus, some of the results are opposite to our hypotheses. Although dream recall frequency did not differ between Tunisian and German participants, a result which was in line with previous findings from Bulkeley (2014), nightmare frequency was significantly higher in the German sample. This may be due to the culture-dependent definition of a nightmare: While in Western cultures nightmares are regarded as coming from the inner self and reflecting mental states or problems, they are regarded as an expression of transcendental communication in the Islam. Thus, the relative frequency of such bad dreams and their interpretation as nightmares may be biased, with an overestimation in the Western culture due to a focus on inner problems and an underestimation in Islamic cultures due to a tendency to avoid negative or punishing transcendental communication in dreams. This assumption is supported by the tendency to not talk about nightmares in the Islamic culture (Bulkeley, 2008).

Surprisingly, the intensity of dream emotions was higher in the German sample than in the Tunisian sample. Due to the reported higher respect for and appreciation of dreams in the Islam (e. g., Bulkeley, 2008) we expected the opposite. One possible explanation based on Dwairy and Van Sickle (1996) is that Arab people tend to have a distance between themselves and their feelings and therefore are not used to communicate emotions. Likewise, Dwairy and Sickle (1996) postulate that Arab societies have a relatively poor regard for verbal expression as a product of cultural pressure requiring to express those feelings that others will readily accept, rather than expressing what one truly feels.

Concerning dream origin and contrary to our expectation, the present results did not support the view that dreams in an Islamic culture are considered as originating from an external source. In fact, the participants from Tunisia more likely saw the origin of their dreams in themselves and in their waking-life behavior. This may point to the assumption

that leading a good and moral life may affect their dreams. Explicit behavior advice for having "good" and "true" dreams given in the *Hadith* and the variety of Islamic dream literature to symbolize dreams support this result (Bulkeley, 2008). On the other hand, this assumption was not supported by our results, as the participants from Tunisia did not believe that their dreams contained an important message significantly more than the participants from Germany did. This might be also due to the way the questions were asked and should be formulated more clearly in following research. However, concerning the impact of dreams on waking life, people with Islamic faith were more prone to change their life due to a dream. Previous findings of Muslim people changing their behavior in waking life because of a dream they had (Crapanzano, 1975; Hoffman, 1997; Mittermaier, 2011; Nwoye, 2017) is supported by the presented results. Likewise, the assumption of the influence of waking-life behavior in the sense of leading a good and sincere life on dreams was, as expected, more common among the Tunisian participants than among the German ones. To make sure the behavior referred to spirituality and religion, examples were given within the question. The findings are in line with Crapanzano (1975) and Mittermaier (2011), who ascribe to Moroccan and Egyptian people that they actively try to influence their dreams, as opposed to a passive acceptance in Western cultures, in accordance with a lower relevance of dreams in waking life (King, Welt & Bulkeley, 2011). Thus, our assumption that in the Islamic culture dreams would be more related to waking life and have more impact on waking life than in non-Islamic cultures (Bulkeley, 2008) was supported by the present results.

*Table 3*. Regression models including age, sex, nation and dream recall frequency concerning dream recall frequency, dream intensity, nightmare prevalence, dream source, relevance of the waking life behavior on a dream, receiving a message through dreams and change of behavior based on a dream

| Variables | ß | *t* | *p* |
|---|---|---|---|
| Dream recall frequency | | | |
| Age | .010 | 1.46 | .146 |
| Sex | .485 | 3.46 | <.001 |
| Nation | .039 | 0.30 | .765 |
| Intensity | | | |
| Age | .053 | 1.13 | .258 |
| Sex | -.132 | -3.02 | .003 |
| Nation | -.112 | -1.18 | .013 |
| Nightmare prevalence | | | |
| Age | .029 | 3.51 | <.001 |
| Sex | .577 | 3.39 | <.001 |
| Nation | -.112 | -.70 | .486 |
| Dream source | | | |
| Age | -.002 | -.54 | .590 |
| Sex | -.050 | -.63 | .529 |
| Nation | .268 | 3.61 | <.001 |
| Dream recall frequency | -.028 | -1.14 | .256 |
| Relevance of the waking life behavior on a dream | | | |
| Age | -.017 | -4.27 | <.001 |
| Sex | .040 | .47 | .636 |
| Nation | .450 | 5.80 | <.001 |
| Dream recall frequency | -.034 | -1.31 | .190 |
| Receiving a message through dreams | | | |
| Age | -.001 | -.26 | .794 |
| Sex | -.079 | -.92 | .357 |
| Nation | .191 | 2.41 | .016 |
| Dream recall frequency | -.086 | -3.21 | .001 |
| Change of behavior based on a dream | | | |
| Age | -.005 | -1.63 | .104 |
| Sex | .054 | .78 | .437 |
| Nation | .428 | 6.66 | <.001 |
| Dream recall frequency | -.086 | -3.96 | <.001 |

Note: ß = Standardized estimates

On the one hand, the results indicate that Tunisia, becoming a modern and Western country, does not seem to differ from Germany with respect to some dream characteristics. On the other hand, there are still some differences in dream characteristics and assumptions about dreams that may be related to the Islamic culture and tradition of dream interpretation. It is thus an open question whether the observed results, which are partially opposite to the assumptions derived for an Islamic country, represent the true attitudes towards dreams in Tunisia or are an artefact due to the selection of the sample or the formulation of the questions. For example, the question *"Do you think that you are actively involved in the formation of your dream while dreaming?"* did not clearly reflect the internal dream source, as it could also be understood as lucid dreaming. The formulation of the question was not clear, and it would have been better to directly ask if a person assumes that their dreams are coming from an external source. The question addressing the appreciation of dreams and indirectly the dream source *"Do you think the dream contains an important message?"* is ambiguous and can indicate a dream message stemming from the inner self or stemming from an external source (God, demons, etc.).

Since the great majority of the Tunisian participants had an Islamic faith, whereas in the German sample religious orientation was widespread but contained only 0.7 % Islamic faith, the differences between Tunisia and Germany can also be regarded as differences between Islamic and non-Islamic religion of the participants. This assumption was further supported by an additional statistical analysis based on the religious orientation of the participants (Islam vs. non-Islam) which strongly replicated the results from the Tunisia vs. Germany comparison. Thus, it can be concluded that the Islamic religion itself has an influence on the perception of dreams, supporting previous findings (Abu-Rabia, 2014; Ather, 2015; Bulkeley, 2008; Punamäki & Joustie, 1998; Shulman & Stroumsa, 1999). It doesn't seem to be religion itself that comes with a higher appreciation of dreams, but rather the Islamic religion, since, for example, the Christian religion does not emphasize dreams and dream experiences in the same way.

The study has several limitations. As already mentioned, the formulation of the questions was partly ambiguous and it would have been helpful to test the understanding of the questions prior to the investigation. In addition, the sample sizes were rather small and it cannot be assumed that they are representative for the respective country. Likewise, the reported gender differences rely on small samples and it

must be questioned if they are representative. A further limitation of the study is the term of Western and Islamic culture we used to compare the Tunisian and German sample. We cannot generalize the results on major cultural differences as Western and Islamic cultures are very diverse and we only investigated a component of them. One important aspect is that the majority of educated people in Tunisia speak French as their mother tongue, but people from lower social and economic classes may not be able to speak or read French. For further studies it would be interesting to address all economic classes in Tunisia by translating the questionnaire into Arabic, and to extend the research to other Islamic cultures.

In sum, the present study showed that dream characteristics and attitudes towards dreams differ between participants from Tunisia and from Germany. Since, in addition to social, economic and cultural differences, religion differs greatly between Tunisia and Germany, the observed differences could be attributed to the influence of the Islam. This influence resulted in less nightmares and a stronger relation between waking life and dreams in Tunisian participants. A supposed external source of dreams and the assumption that dreams bear an important message (in Tunisian participants) could not be confirmed. In a more general view, the results add evidence to the assumption that dreaming and dream characteristics are psychologically and culturally determined.

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